

New or Little-Known Crane Flies from Iran. IV (Diptera: Tipulidae)¹

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Abstract: Part III of this series of papers that concern the crane flies of Iran was published in this Journal. In this paper species belonging to the tribe Eriopterini were treated. In the final report here provided I am treating species in the major tribes Limoniini and Hexatomini. The new species here described are *Limonia (Dicranomyia) nigritorus*, L. (D.) *schmidiana*, L. (D.) *subdidyma*, *Dicranota (Dicranota) ophidia*, and *Limnophila (Elaeophila) albofascia*. In addition to the above novelties about a score of other species in these two tribes are added to the previous limited list of crane flies presently known from Iran.

The three preceding papers on the crane flies of Iran that were collected by Dr. Fernand Schmid in 1955 and 1956 discussed species in the tribes Pediciini and Eriopterini. In this final report the tribes Limoniini and Hexatomini are stressed and rather numerous species are added to the poorly known fauna of Iran. The detailed report by Schmid on the *Trichoptera* of Iran was cited in the previous paper in this series. It includes an excellent account of the various collecting stations where he studied the chiefly aquatic groups of insects in 1955 and 1956 and the paper should be consulted by all students working on this particularly interesting part of southwestern Asia. As had been stressed before, the Schmid collections of crane flies made in southern Asia have provided the great majority of the species presently known. All types of Tipulidae from these collections are preserved in the Alexander Collection.

LIMONIINI

Limonia (Dicranomyia) decemmaculata (Loew)

Limnobia decemmaculata Loew; Berlin. Entomol. Zeitschr., 17: 35; 1873.

Dicranomyia decemmaculata Lackschewitz; Ann. naturhist. Mus. Wien; 42: 205-206, pl. 5, fig. 6 (hypopygium); 1928.

Limonia (Dicranomyia) decem-maculata Edwards; Trans. Soc. Brit. Ent., 5: 30-31, pl. 2, fig. 12 (wing); 1938.

Wide-spread in Europe. *Iran*: Lius, 2200 meters, September 14, 1955; Ramsar, October 2, 1956 (Schmid). Wing (Fig. 1); hypopygium (Fig. 3).

It should be noted that Lackschewitz in the above reference shows the male hypopygium with two rostral spines on the ventral dististyle, presumably in error. All other specimens known to me have the single spine as shown in the figure. The Oriental *Limonia (Dicranomyia) flavocincta* (Brunetti), L. (D.) *vibishana* Alexander and L. (D.) *whitei*

¹ Contribution from the Entomological Laboratory, University of Massachusetts.

Alexander, of South India and Ceylon evidently are allied despite the virtually unpatterned wings.

Limonia (Dicranomyia) nigritorus, n. sp.

Size medium (wing of male 8.5 mm); mesonotum gray, patterned with darker; knobs of halteres dark brown; legs yellow, tips of femora narrowly dark brown; wings whitish, conspicuously patterned with brown, *Sc* long, *Sc*₁ ending opposite one-third *Rs*; abdomen dark brown, posterior borders of segments broadly light yellow; male hypopygium with dorsal dististyle long and slender, sinuous; ventral dististyle with two separated rostral spines, face of style near base of prolongation with a subconical black lobe that is provided with numerous black spines, mesal face of style at apex with dense microscopic setae.

Male. Length about 8.5 mm; wing 8.5 mm; antenna about 1.6 mm.

Rostrum and palpi dark brown. Antennae with scape and pedicel dark brown, flagellum brown, the bases of proximal two segments narrowly yellowed; proximal flagellar segments oval with truncated ends, outer ones elongate; verticils shorter than the segments. Head dark brown.

Pronotal scutum dark brown, scutellum paler. Mesonotal praescutum gray with darker stripes; scutum blackened, gray pruinose, lobes darker; scutellum brownish gray, narrowly more blackened medially, parascutella light yellow; postnotum brown, light gray pruinose. Pleura light gray, dorsopleural membrane more brownish yellow. Halteres with stem light yellow, knob large, dark brown. Legs with coxae and trochanters light yellow; femora yellow, tips narrowly dark brown; tibiae yellow, extreme tips darkened; tarsi yellow, outer segments darkened. Wings whitened, conspicuously patterned with brown; cells *C* and *Sc* with three darker areas, placed at base, near midlength and at outer end of vein *Sc*; stigma brown, confluent with a large concolorous spot; other major paler brown clouds in cell *M*₄ and at ends of both anal veins, with a further broken series in cell *M*, chiefly along vein *Cu*; smaller darkened seams over cord, outer end of cell *1st M*₂, and at tips of veins *R*₃ and *M*₃; veins chiefly brown, darker in the more heavily patterned areas, yellowed in the costal interspaces. Venation: *Sc* long, *Sc*₁ ending opposite one-third *Rs*; cell *1st M*₂ subequal to vein *M*₁₊₂; *m-cu* shortly before fork of *M*.

Abdomen dark brown, posterior borders of segments broadly light yellow. Male hypopygium (Fig. 4) with tergite, *t*, transverse, posterior border shallowly emarginate, the low lobes more thickened, with long setae. Basistyle, *b*, and ventral dististyle nearly subequal in area or the latter slightly larger. Dorsal dististyle, *d*, very long and slender, sinuous; ventral style with rostral prolongation slender, with two separated subequal spinoid setae, the outer one about one-half its length from apex of rostrum; apex of mesal face of body of style with a concentration of very short blackened erect setulae, much smaller than the normal setae; face of style near base of the prolongation with a subconical black lobe, its apex provided with several strong spines, the lobe placed in the curvature of the outer style. Gonapophyses, *g*, with mesal-apical lobe slender. Aedeagus, *a*, narrow, especially the lateral flanges, apex simple.

Holotype. ♂, Barajan, Iran, 2000 meters, September 15, 1955 (Schmid).

The present species is readily told from other regional members of the subgenus that have patterned wings and long *Sc* by the body coloration and especially the hypopygial structure. The distinctive blackened lobe on the ventral dististyle is particularly noteworthy and has suggested the specific name. *Limonia (Dicranomyia) modesta* (Meigen), widely distributed throughout the Holarctic region, has the hypopygium with somewhat similar but longer

modified setulae on the ventral dististyle but differs in many other regards, including the unpatterned wings, short *Sc*, and details of the hypopygium.

Limonia (Dicranomyia) schmidiana, n. sp.

Allied to *mitis*; general coloration of thoracic dorsum brownish gray, pleura yellow; rostrum light yellow, antennal scape brownish yellow, remainder brown; legs light brown; wings subhyaline, virtually unpatterned, stigmal region scarcely darker; *Sc*₂ retracted, at near two-thirds *Sc*; male hypopygium with ninth tergite pale, posterior border with two broadly rounded lobes, the setae short; ventral dististyle small and rounded, only slightly larger than the basistyle; rostral spines long, about twice the prolongation; mesal-apical lobe of gonapophyses small, slender.

Male. Length about 7.5–8 mm; wing 7–8 mm; antenna about 1.2 mm.

Rostrum clear light yellow, palpi and mouthparts dark brown. Antennae with scape brownish yellow, remainder of antenna brown, the extreme bases of proximal flagellar segments more yellowed; segments short-oval, the outer ones longer, terminal segment strongly narrowed on outer third. Anterior vertex yellowed, remainder of head chiefly light gray, paler behind; anterior vertex relatively broad.

Pronotum obscure yellow. Mesonotal praescutum with three brownish gray stripes that virtually cover the dorsum; scutal lobes chiefly brownish gray, central area pale; scutellum pale yellow; postnotal mediotergite yellowed, pleurotergite more whitened or light gray. Pleura yellow, including the dorsopleural membrane. Halteres with stem yellow, the large knob brown. Legs with coxae and trochanters yellow; femora light brown, tips not darker; tibiae and tarsi light brown. Wings subhyaline, virtually unpatterned, the stigmal region scarcely darker than the remainder; veins pale, *Sc*₂ and base of *Rs* slightly darker. Vein *Sc* without trichia; sparse trichia at end of 2nd *A*. Venation: *Sc*₁ ending about opposite origin of *Rs*, *Sc*₂ retracted, at near three-fifths to two-thirds *Sc*; *m-cu* at or shortly before fork of *M*.

Abdominal tergites yellowish brown, sternites and hypopygium yellow. Male hypopygium (Fig. 5) combining the characters of *mitis* (long rostral spines) and *chorea* (small ventral dististyle), differing in details. Ninth tergite, *t*, pale, posterior border with two broadly rounded lobes, the median emargination acute; setae short and pale. Basistyle, *b*, in area slightly less than the ventral dististyle; ventromesal lobe with moderately long setae. Dorsal dististyle, *d*, long and slender, sickle-shaped, curved and narrowed to the acute more or less recurved apex: ventral style short-oval to rounded; rostral prolongation small, the two spines approximated, long and straight, about twice the length of the prolongation. Gonapophysis, *g*, with mesal-apical lobe small, relatively slender. Aedeagus, *a*, with apertures subterminal, median lobe conspicuous.

Holotype. ♂, Darband, Iran, April 22, 1956 (Schmid). *Paratopotypes*, 2 ♂♂, pinned with type.

The species is dedicated to the collector, Dr. Fernand Schmid. It is most nearly related to *Limonia (Dicranomyia) mitis* (Meigen) and allied species, as shown by the hypopygial structure, especially the relative lengths of the rostral spines of the hypopygium. In the small ventral dististyle it agrees more nearly with *L. (D.) chorea* (Meigen) but is quite distinct from this and other members of this group as delimited by Lackschewitz (Ann. naturhist. Mus. Wien, 42: 209–217; 1928). Other particularly important papers on this group of flies include Edwards (Trans. Soc. Brit. Ent., 5: 28–44; 1938) and de Meijere (Tijd. voor Ent., 62: 65–90; 1919). Attention may be called to the species *L. (D.) lutea* Meigen (see Edwards, above, p. 37; de Meijere, p. 78) that was placed as a race or variety

of *mitis*, differing in coloration of the body and wings and in hypopygial structure, including the ventral dististyle, as discussed. Lackschewitz (1928, above) considered this as being a yellowish autumnal form of *chorea*.

Limonia (Dicranomyia) subdidyma, n. sp.

General coloration of mesonotal praescutum and scutal lobes dull light brown, posterior sclerites of notum and the pleura more yellowed; knobs of halteres blackened; legs with femora yellow, tips very narrowly dark brown; wings pale yellow with a pale brown pattern including four costal areas that are narrower than the interspaces, other darkenings on wing paler; Sc_2 far retracted, at near midlength of Sc ; male hypopygium with rostral prolongation of dististyle triangular in outline, with two short spines near base on face of style.

Male. Length about 8 mm; wing 9 mm.

Rostrum and palpi brown. Antennae brown; flagellar segments oval with truncated ends; terminal and penultimate segments subequal in length. Head brown.

Pronotal scutum pale brown, scutellum more yellowed. Mesonotum dull light brown with vague indications of light gray stripes; scutal lobes light brown, median area and the scutellum pale yellow; postnotum brownish yellow. Pleura dull brownish yellow, dorsopleural region clearer yellow. Halteres with stem yellow, knob almost black. Legs with coxae and trochanters yellow; femora obscure yellow, tips very narrowly dark brown; tibiae brownish yellow, extreme tips faintly darkened; tarsi brownish yellow, outer segments darker. Wings pale yellow with a relatively inconspicuous pale brown pattern that includes four costal areas, much narrower than the interspaces, the first area above the arculus, second at Sc_2 , the third slightly larger, involving the tip of Sc_1 and origin of Rs ; fourth darkening comprises the pale brown stigma, nearly confluent with a smaller area over the fork of Rs ; further more restricted markings over remainder of cord, outer end of cell *1st M*₂ and tip of R_2 ; still smaller marginal clouds at ends of veins M_3 to *2nd A*, the last more extensive and slightly paler; veins yellow, light brown in the clouded areas. Venation: Sc_1 ending opposite origin of Rs , Sc_2 far retracted, close to midlength of Sc ; free tip of Sc_2 and R_2 in transverse alignment; *m-cu* shortly before the fork of *M*.

Abdomen pale brown, the extreme posterior borders of segments more yellowed; hypopygium with basistyle darker brown. Male hypopygium (Fig. 6) with tergal lobes, *t*, rounded, vestiture pale and inconspicuous. Basistyle, *b*, with ventromesal lobe rounded, vestiture long. Dorsal dististyle, *d*, bent at midlength, the narrowed outer end slender, tip decurved; ventral style about twice the basistyle, rostral prolongation triangular in outline; spines short, placed on face of prolongation near base. Gonapophyses, *g*, with mesal-apical lobe erect.

Holotype. ♂, Darband, Iran, April 22, 1956 (Schmid).

The most similar Palaearctic species include *Limonia (Dicranomyia) chorea* (Meigen), *L. (D.) didyma* (Meigen) and *L. (D.) mitis* (Meigen), all with the wings patterned and with Sc_1 very long. The single most similar species is *didyma* which differs evidently in wing

FIG. 1. *Limonia (Dicranomyia) decemmaculata* (Loew); venation.

FIG. 2. *Dicranota (Dicranota) ophidia*, n. sp.; venation.

FIG. 3. *Limonia (Dicranomyia) decemmaculata* (Loew); male hypopygium.

FIG. 4. *Limonia (Dicranomyia) nigritorus*, n. sp.; male hypopygium.

FIG. 5. *Limonia (Dicranomyia) schmidiana*, n. sp.; male hypopygium.

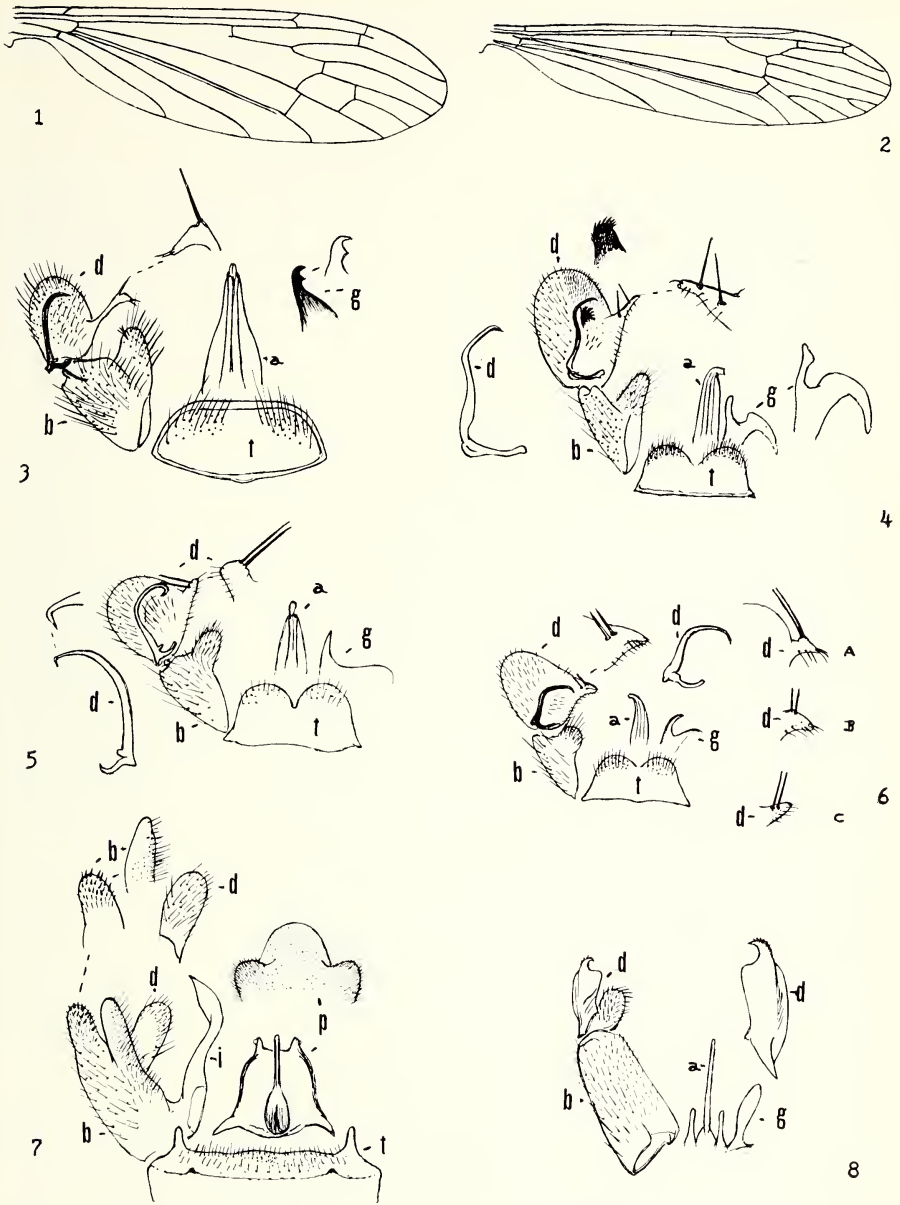


FIG. 6. *Limonia (Dicranomyia) subdidyma*, n. sp.; male hypopygium. Subfigures: A, *didyma* (Meigen); B, *chorea* (Meigen); C, *mitis* (Meigen).

FIG. 7. *Dicranota (Dicranota) ophidia*, n. sp.; male hypopygium.

FIG. 8. *Limnophila (Elaeophila) albofascia*, n. sp.; male hypopygium.

(Symbols: Male hypopygium—a, aedeagus; b, basistyle; d, dististyles; g, gonapophysis; i, interbase; p, phallosome; t, 9th tergite.)

pattern, as the undarkened arcular region, and especially in hypopygial details. I have provided illustrations of the rostral prolongations of the above three species in subfigures, *didyma*, 6A; *chorea*, 6B; *mitis*, 6C.

PEDICINI

Dicranota (Dicranota) ophidia, n. sp.

Size relatively large (wing 7–8 mm); antennae short; general coloration of thorax light brownish gray, praescutum with a darker central stripe, pleura brownish yellow, sparsely pruinose; halteres and legs yellow; wings faintly infuscated, stigma only slightly darker, R_{2+3+4} subequal to or shorter than basal section of R_5 ; male hypopygium with lateral tergal blades short, posterior border truncate, setae short; dorsal lobe of basistyle with short blackened subspinoid setae; interbase a sinuous snakelike rod, slightly constricted before the pointed head.

Male. Length about 7–8 mm; wing 7–8.5 mm; antenna about 1–1.2 mm.

Female. Length about 8.5–9 mm; wing 7–8 mm.

Rostrum brownish gray, palpi black. Antennae short, brownish black, scape pruinose. Head brownish gray.

Pronotum light brown, pretergites and posterior borders of scutum and scutellum light yellow. Mesonotal praescutum light brownish gray with a conspicuous darker brown central stripe, lateral stripes much narrower; scutum light gray, centers of lobes extensively light brown; scutellum brown, light gray pruinose; postnotum brownish yellow, slightly pruinose. Pleura brownish yellow, slightly pruinose. Halteres light yellow. Legs with coxae yellow, fore and middle pairs slightly pruinose; trochanters yellow; remainder of legs brownish yellow, outer tarsal segments slightly darker; claws long, gently curved. Wings (Fig. 2) faintly infuscated, stigma only slightly darker; veins light brown. Macrotrichia of veins beyond cord long and delicate; basal veins, including M and both Anals with much shorter trichia on outer two-thirds or more, less extensive on Cu . Venation: R_{2+3+4} variable in length, in cases subequal to or shorter than basal section of R_5 , in cases twice as long; cell M_1 present.

Abdominal tergites light to darker brown, sternites slightly paler, hypopygium darker brown. Male hypopygium (Fig. 7) with tergite, t , truncate, with abundant short setae, lateral tergal ends produced into short slender blades. Basistyle, b , with dorsal lobe stouter, vestiture short, blackened, subspinoid; ventral lobe glabrous above, lower margin with numerous pale setae, the more basal ones shorter. Interbase, i , distinctive, appearing as a long sinuous snakelike rod, slightly constricted before the long pointed head. Phallosome, p , with details generally as figured, aedeagus short and slender.

Holotype. ♂, Zanus, Iran, 2000 meters, September 21, 1955 (Schmid).

Allotopotype, ♂, pinned with type. *Paratypes*, ♂ ♀, Lius, 2200 meters, September 14, 1955; Rayne, 1800 meters, September 2–5, 1955; Waliabad, September 16–24, 1956 (Schmid).

The more similar species include *Dicranota (Dicranota) capillata* Lackschewitz and the larger *D. (D.) fuscipennis* Lackschewitz, of central Europe, especially the former. I possess a paratype of *capillata* received in an exchange with Lackschewitz (Salzburg, Gastein, 1879, collected by Joseph Mik). This differs from the present fly in the very distinct venation of the radial field but this feature may well represent an individual variation only. In the specimen *r-m* is before the fork of R_5 that forks into a trident and cell M_1 is very reduced. The details of the male hypopygium are quite distinct, especially the produced tergal border

and the shape and vesiture of the dististyle. The interbase is generally as in the present fly, differing in the outer conformation.

HEXATOMINI

Limnophila (Elaeophila) albofascia, n. sp.

General coloration of head and thorax brownish gray, praescutum conspicuously patterned with darker brown; knobs of halteres dark brown; wings with distinctive pattern, including darker costal areas, with a complete unbroken pale band at midlength between the third and fourth darkened areas; no darkened spots or dots on veins; male hypopygium with outer dististyle narrowed at apex into a short curved point; dorsal crest long and low; gonapophyses large; aedeagus long and slender.

Male. Length about 7.5 mm; wing 6.5 mm.

Female. Length about 8 mm; wing 7 mm.

Rostrum light brown; palpi black. Antennae with scape and pedicel light brown; flagellum broken. Head brownish gray.

Pronotum brownish gray. Mesonotal praescutum brownish gray, patterned with brown, including six longitudinal lines, intermediate pair broader on anterior half, directed laterad anteriorly to form lateral marginal stripes, posterior halves of intermediate stripes much narrower and paler, sublateral darkenings broader; pseudosutural foveae brownish black; posterior sclerites of notum pale yellowish gray with very inconspicuous darker markings on scutal lobes and at median line. Pleura pale brown, vaguely patterned with darker. Halteres with stem yellow, outer end of the large knob dark brown. Legs with coxae and trochanters yellow; remainder of legs broken. Wings with ground pale yellowish white, the darkened areas subequal in size; a series of about six darker brown marks in costal field, with a very broad continuous ground crossband at midlength of wing that completely divides the darkened areas; costal darkenings darker, with three marks before the dividing ground band, the basal one at and near the arcular area; second darkening small, in cell *R* narrowed; third band complete, in the type narrowed at the supernumerary crossvein in cell *M*, behind expanded and more or less divided at end of vein *2nd A*; beyond the intermediate ground band with the fourth darkened area in costal field expanded to include the forks of veins *Sc* and *R*₁, almost confluent, narrowed posteriorly over *r-m* and posterior cord, more or less confluent with darkenings at end of cell *1st M*₂; two outer darkened areas at ends of veins *R*₃ and *R*₄, more extensive in holotype, in outer radial cells separated by a circular ground mark in outer end of cell *R*₃; behind the dark pattern more extensive in the holotype, involving much of outer ends of cell *R*₄ and *R*₅, with only the tip pale; in the female the dark pattern at wing apex more restricted, appearing as seams over fork of *M*₁₊₂ and the apices of all longitudinal veins excepting *R*₅; no supplementary spots or dots on longitudinal veins as in several species in this subgenus; veins yellow in the ground areas, darkest in the costal darkenings, paler behind. Venation: Supernumerary crossvein in the third darkened area; *R*₂₊₃₊₄ about one-half longer than basal section of *R*₅.

Abdomen yellow, patterned with brown, most evident as darkenings at posterior ends of segments, broader outwardly. Male hypopygium (Fig. 8) with outer dististyle, *d*, as shown, the apex narrowed into a short curved point; outer margin with a row of small appressed spines, dorsal crest long and low. Gonapophyses, *g*, appearing as long paddles that are more than one-half the length of the long slender aedeagus.

Holotype. ♂, Durbadam, Iran, July 3, 1956.

Allotype. ♀, Chenes, Iran, May 19, 1956 (Schmid).

From other regional members of the subgenus *Elaeophila* with somewhat comparable wing patterns, especially with no darkened spots or dots along the veins, the present fly is most readily told by the broad continuous pale ground fascia at near midlength of the wing and in details of hypopygial structure, especially the outer dististyle and phallosome. The most similar such species is *Limnophila (Elaeophila) submarmorata* (Verrall) which differs in the above respects. The great variation found in the wing pattern in *submarmorata* has been discussed by Edwards and various forms have been named by him (Trans. Soc. Brit. Ent., 5: 81-84, pl. 4, figs. 1-7, wings; 1938).

DISTRIBUTIONAL RECORDS

LIMONIINI

Helius (Helius) hispanicus Lackschewitz

Helius hispanicus Lackschewitz; Ann. naturhist. Mus. Wien, 42: 242-243; 1928.

Described from Algeciras, Andalusia, Spain (Hanns Zerny). *Iran*: Mughan, June 20, 1956 (Schmid).

Helius (Helius) pallirostris Edwards; Trans. Ent. Soc. London 1921: 206; 1921.

Europe: Britain; Sweden; Denmark, and others. *Iran*: Kia Kola, May 22, 1956 (Schmid).

Antocha (Antocha) libanotica Lackschewitz

Antocha (Antocha) libanotica Lackschewitz; Ann. naturhist. Mus. Wien, 50: 8, pl. 1, figs. 4; 1939 (1940).

Type from Libanon; paratype in Alexander Collection.

Iran: Ardehjan, September 11, 1956; Dazdban, May 18, 1956; Lius, 2200 meters, September 14, 1955; Meyur, August 23, 1956; Mishgin, August 21, 1956; Rayne, 1800 meters, September 2, 1955; Shirgah, May 23, 1956; Zanus, 2000 meters, September 21, 1955; Zirab, May 23, 1956 (Schmid).

Limonia (Limonia) hercegovinae (Strobl)

Limnobia Hercegovinae Strobl; Glasnik Zem. Mus. Bosni i Hercegov., 10: 610; 1898.

Central and Eastern Europe. *Iran*: Barajan, 2000 meters, September 15, 1955; Hassankif, September 28, 1956; Khazlak, June 6, 1956; Lius, 2200 meters, September 14, 1955; Zanus, 2000 meters, September 21, 1955 (Schmid).

Limonia (Limonia) neonebulosa Alexander

Dicranomyia nebulosa Alexander; Canad. Ent., 45: 203; 1913 (preoccupied by Zetterstedt, 1838).

Limonia (Dicranomyia) neonebulosa Alexander; Philippine Jour. Sci., 24: 555; 1924.

Eastern Asia; Eastern North America. *Iran*: Baharistan, August 20, 1956 (Schmid).

Limonia (Melanolimonia) morio (Fabricius)

Tipula morio Fabricius; Mantissa Ins., 2: 324; 1787.

Europe (widespread). *Iran*: Daiband, April 22, 1956; Khozlok, June 6, 1956 (Schmid).

Limonia (Dicranomyia) chorea (Meigen)

Limnobia chorea Meigen; Syst. Besch. 1: 134; 1818.

Dicranomyia chorea de Meijere; Tijds. v. Ent., 62: 74, fig. 7 (hypopygium); 1919.

Dicranomyia chorea Lackschewitz; Ann. naturhist. Mus. Wien, 42: 211, fig. 8 (hypopygium); 1928.

Limonia (Dicranomyia) chorea Edwards; Trans. Soc. Brit. Ent., 5: 35, pl. 2, fig. 20 (wing); text fig. 5 a (hypopygium); 1938.

Europe (widespread). *Iran*: Lius, 2200 meters, September 14, 1955 (Schmid).

Limonia (Dicranomyia) didyma Meigen*Limonia didyma* Meigen; Klass., 1: 55; 1804.

Europe (widespread). *Iran*: Aliabad, 1800 meters, September 7, 1955; Ardehjan, September 11, 1956; Barajan, 2000 meters, September 15, 1955; Lius, 2200 meters, September 14, 1955; Waliabad, September 16 and 24, 1956 (Schmid).

Limonia (Dicranomyia) fusca (Meigen)*Limnobia fusca* Meigen; Syst. Besch. 6: 274; 1830.

Widespread in Europe and North America. *Iran*: Baharistan, 2000–3000 feet, September 10, 1956; Barajan, 2000 meters, September 15, 1955; Harandan, 100 feet, September 11, 1956 (Schmid).

Limonia (Dicranomyia) longipennis (Schummel)*Limnobia longipennis* Schummel; Beitr. zur Ent., 1: 104; 1829.

Holarctic; widespread. *Iran*: Barajan, 2000 meters, September 15, 1955; Gulugah, September 8, 1956; Mishgin, August 21, 1956; Javardi, 4000 feet, October 7, 1956; Quattekas, 1800 meters, September 19, 1955 (Schmid).

Limonia (Dicranomyia) modesta (Meigen)*Limnobia modesta* Meigen; Syst. Besch., 1: 134; 1818.

Europe. *Iran*: Gach-i-Lai (name faulty), May 17, 1956; Lius, 2200 meters, September 14, 1955; Mishgin, 4500 feet, August 21, 1956; Ziarat, 2000 feet, July 13, 1956 (Schmid).

Limonia (Dicranomyia) ventralis (Schummel)*Limnobia ventralis* Schummel; Beitr. zur Entomol., 1: 136; 1829.

Limonia (Dicranomyia) pristomera Alexander; Oriental Insects, 1: 204–205, fig. 8 (hypopygium); 1967 (synonym).

Europe; Afghanistan; South India (Kerala; Madras; Mysore). *Iran*: Fumen, 50 feet, August 18, 1956; Pul-i-Zoghal, 1760 feet, October 12, 1956 (Schmid).

HEXATOMINI

Paradelphomyia (Oxyrhiza) czizekiana Starý*Paradelphomyia (Oxyrhiza) czizekiana* Starý; [^]Časopis Moravskeho Musee, 55: 135–137, figs.; 1971.

Types from Moravia, Czechoslovakia. *Iran*: What appears to be this species from Ardehjan, September 11, 1956; Baharistan, circa 2000–3000 feet, September 10, 1956; Lius, circa 7000 feet, September 14, 1955 (Schmid). The most important difference from Starý's description and figures is in the hypopygium, especially the ventral fork where the two spines are widely separated basally, being placed on a horizontal connecting rod. Despite this difference I believe the identification is correct.

Paradelphomyia (Oxyrhiza) fuscula (Loew)*Cladura fuscula* Loew; Berlin. Ent. Zeitschr., 17: 35; 1873.

Europe. *Iran*: Quattekas, circa 4500 feet, September 19, 1955 (Schmid).

Austrolimnophila ochracea (Meigen)*Limonia ochracea* Meigen; Klass., 1: 55; 1804.

Europe. *Iran*: Ardehjan, September 11, 1956; Bozak, 1800 meters, September 11, 1955 (Schmid). The present fly and the Nearctic *Austrolimnophila toxoneura* (Osten Sacken) are very similar and perhaps will be found to be identical.

Pseudolimnophila lucorum (Meigen)*Limnobia lucorum* Meigen; Syst. Besch. 1: 125; 1818.

Europe. *Iran*: Ardehjan, September 9, 1956; Baharistan, September 10, 1956; Barajan, 2000 meters, September 15, 1955; Chalus, May 19, 1956; Zanus, 2000 meters, September 21, 1955 (Schmid).

Limnophila (Elaeophila) submarmorata (Verrall)

Ephelia submarmorata Verrall; Ent. Mo. Mag., 23: 264; 1887.

Limnophila (Elaeophila) submarmorata Edwards; Trans. Soc. Brit. Ent., 5: 81-84, pl. 4, figs. 1, 2; text fig. 15 b; 1938.

Europe. *Iran*: Gurgan, April 1, 1956; Zanus, 2000 meters, September 21, 1955 (Schmid).

Pilaria discicollis (Meigen)

Limnobia discicollis Meigen; Syst. Besch., 1: 125; 1818.

Europe. *Iran*: Quattekas, 1800 meters, September 19, 1955 (Schmid).

Pilaria scutellata (Staeger)

Limnophila scutellata Staeger; in Krojer, Naturhist. Tidsskr. 3: 34; 1840.

Europe. *Iran*: Chalus, May 19, 1956 (Schmid).

TIPULINAE

Tipula (Acutipula) maxima transcaucasica Savtshenko

Tipula (Acutipula) maxima transcaucasica Savtshenko; Fauna U. S. S. R., Diptera II, No. 3: 413; 1961.

U.S.S.R.: Transcaucasia. *Iran*: Lius, 2200 meters, September 14, 1955 (Schmid).

Tipula (Tipula) orientalis Lackschewitz

Tipula (Tipula) orientalis Lackschewitz; Konowia, 9: 272-273, fig. 7; 1930.

South Europe; Egypt; Kurdistan; Caucasus. *Iran*: Rayne, 1800 meters, September 5, 1955 (Schmid).